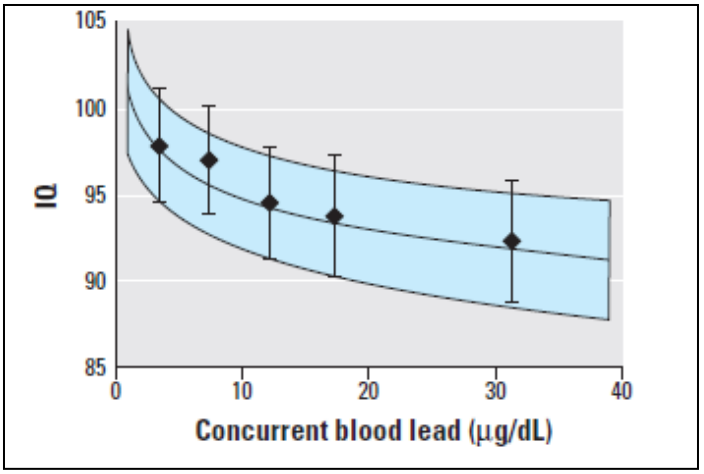
Department of Health and Senior Services
Benefits of Lead Hazard Control

Despite significant improvements, lead poisoning remains a serious public health hazard, especially for young children. Lead exposure can cause significant and lifelong neurodevelopmental impairment. Even low levels of exposure are dangerous.
Impacts of lead exposure include:

- Reduced IQ
- increased risk of Attention Deficit Hyperactivity Disorder (ADHD)
- Delayed reading ability
- Interference with growth and hearing.



This figure shows decreasing IQ with increasing blood lead.

While there is no known "safe" level of lead in the body, the Centers for Disease Control and Prevention (CDC) uses 5 micrograms per deciliter (ug/dL) as a reference value for abnormal exposure, 10 ug/dL has generally been used to designate an "elevated blood lead level" (EBL) or lead "poisoning," and in-home risk assessments in Missouri are triggered by a child's blood lead level of 15 ug/dL.

National Benefits of Lead Poisoning Prevention.[1]

Health care: **$11-$53 million**

IQ & lifetime earnings losses: **$190-$268 billion**

Increased special education needs & Attention Deficit Hyperactivity Disorder: **$297-$413 million**

Behavior problems & crime: **$1.7 billion**

Lead poisoning is preventable and numerous studies show that the costs of prevention are far outweighed by the benefits

Significant public health research has shown that economic impacts of reducing lead exposure fall into six broad categories: health care, IQ loss, increased special education needs, lower earnings, behavioral problems and crime.

Health Care Cost Savings in Missouri: In order to estimate annual health care costs that could be avoided by lead exposure reduction through risk assessment activities, we used the actual blood lead testing data for 2010 and estimated medical costs from published literature.[1] Because approximately two-thirds of EBL cases are Medicaid eligible children, these cost savings are listed separately.

Test result categories (ug/dL)	Number of children per category in 2010*	Cost of averted medical actions[1]	Estimated Medicaid savings	Estimated private savings	Total Estimated Medical Savings
10 to < 15	741	$74	$36,556	$18,278	$54,834
15 to < 20	236	$74	$11,643	$5,821	$17,464
20 to < 45	173	$767	$88,461	$44,230	$132,691
45 to < 70	10	$895	$5,967	$2,983	$8,950
>= 70	5	$3,004	$10,013	$5,007	$15,020
Grand Total	***1165***		***$152,639***	***$76,320***	***$228,959***
* 2010 data is the most current complete data.					

Special Education Cost Savings in Missouri: In other published literature, 20% of children with EBLs over 25ug/dL needed special education for an average of 3 years.[2] Based on a 2002 Special Education Expenditure Project report, special education expenditures in Missouri were $7,355 per student.[3] And there were 122 children in 2010 with EBLs of 25 or greater. Therefore, special education costs that could be averted with lead exposure reduction are estimated at **$551,625 over the three years**, even without accounting for inflation.

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City of St. Louis

We have reduced our lead poisoning rate 80%, from 33% to 2.8% - and from 3300 children to 300 children. There are 3000 fewer children poisoned per year in St. Louis than there was in 2002.

Pam Walker, St. Louis City Department of Health.

Jefferson County Case Study

In 2009, a ten month old female was tested by the Jefferson County Health Department (JCHD) and was found to have an elevated blood lead level of 20 ug/dl (a lead level above 10 mcg/dl was considered lead poisoning). JCHD conducted a comprehensive environmental investigation of the home environment and found no likely lead sources. An alert Environmental Specialist suggested testing a bracelet worn by the little girl since four months of age. The bracelet had a high lead content and the parents removed the bracelet. JCHD contacted the store where the bracelet was purchased as well as the US Consumer Product Safety Commission. In February, 2010 the company voluntarily recalled 900 bracelet and pacifier clip units due to high lead content. The little girl has been retested periodically and as of February, 2011 her lead level had decreased to 1.5 mcg/dl.

Dennis Diehl, Jefferson County Health Department

Citizen's Perspective

"I recently had a visit from Sharon and Thelma to test for lead in my home. I found the experience to be very helpful and positive. It's difficult to hear that your child has high lead test results and I felt that these ladies made a difficult time easier to deal with and very encouraging. I appreciate their time and efforts in helping make our home safe. Thank you!"

Jessica W., Mother

School Nurse Testimonial

"I have worked with a student who was lead poisoned (53 µg/dl) and chelated as an infant. This student has been in a self-contained classroom all of their academic life, receiving extensive help with academics and behaviors. This student has been treated for ADHD with medication since 2nd grade. The student has difficulty with peers due to slow processing, retaining information and difficulty following directions. This student will be a victim of this preventable disorder all their life."

Sue Van Patten, RN, Bayless School District

LPHAs are at the forefront of monitoring and managing lead poisoning among children up to the age of six. Lead program costs include outreach, educating families about lead poisoning, lead screening, testing, and case management services as well as required random lead testing.

[1] Gould E. 2009. Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control. Environ Health Perspect. 117:1162-1167.
[2] Schwartz J. 1994. Societal Benefits of Reducing Lead Exposure. Environmental Research. 66: 105-124.
[3] Center for Special Education Finance. 2002. Missouri Special Education Expenditure Project. Available: http://csef.air.org/pub_seep_state.php. [accessed 1/23/13]

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Other Lead Testing and Prevention Stories:

Caldwell County: "Environmental Lead Case Management has made a positive difference in children's lives, especially to the life of "Tommy", a 2 year old whose family lived in Braymer, MO. Upon receiving his initial elevated blood lead level of 24 (peaked at 38 BLL), the health department found it to be very critical to network with consultant resources, who, with local health department nurses investigated the home. Follow-up involved education and cleanup prevention. The landlord cooperated by performing foundation dirt removal as well as painting at his expense. The health department networked with many community resources to assist the family with transportation, gas money, and educational materials. After consulting with Children's Mercy Hospital staff and Maggie Buckland, DHSS, we found that "Tommy's" blood lead levels were decreasing. Soon thereafter, the mother informed us that she was pregnant, and now the risk had greatly been decreased. The mother also recognized that the health department was a resource for prenatal case management and WIC services."

Shelley Reed, Administrator, Caldwell County Health Department

[1] Gould E. 2009. Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control. Environ Health Perspect. 117:1162-1167.
[2] Schwartz J. 1994. Societal Benefits of Reducing Lead Exposure. Environmental Research. 66: 105-124.
[3] Center for Special Education Finance. 2002. Missouri Special Education Expenditure Project. Available: http://csef.air.org/pub_seep_state.php. [accessed 1/23/13]